Horticultural Society; Charles C. Babington, F.R.S., Professor of Botany, Cambridge; M. A. Lawson, F.L.S., Professor of Botany, Oxford; J. H. Balfour, M.D., F.R.S., Professor of Botany, Edinburgh; Alexander Dixon, M.D., Professor of Botany, Glasgow; G. Dickie, M.D., F.L.S., Professor of Botany, Aberdeen; E. Perceval Wright, M.D., F.L.S., Professor of Botany, Dublin; Robert Bentley, F.L.S., Professor of Botany, King's College and Pharmaceutical Society of Great Britain; W. T. Thiselton Dyer, B.Sc., F.L.S., Professor of Botany, Royal Horticultural Society, London; R. O. Cunningham, M.D., F.L.S., Professor of Botany and Zoology, Belfast; W. R. McNab, M.D., Professor of Botany, Royal College of Science, Dublin; George Henslow, F.L.S., Lecturer at St. Bartholomew's Hospital and Royal Agricultural College, Cirencester; John Ball, F.R.S.; Maxwell T. Masters, M.D., F.R.S.; James Bateman, F.R.S.; R. Trevor Clarke, F.R.H.S.; W. Wilson Saunders, F.R.S.; Geo. F. Wilson, F.R.S.; Robert Hogg, LL.D., F.L.S., Pomological Director to the Royal Horticultural Society; W. Sowerby, F.L.S.; D. Moore, Ph.D., F.L.S.; Andrew Murray, F.L.S.; William Munro, Major-General, C.B., F.L.S.; M. Pakenham Edgeworth, F.L.S.; John Miers, F.R.S., V.P.L.S.; Frederick Currey, F.R.S., Sec. L.S.; Daniel Hanbury, F.R.S., F.L.S.; C. E. Broome, F.L.S.; Leonard Blomefield, F.L.S.; J. T. Boswell Syme, LL.D., F.L.S.; Hugh Cleghorn, M.D., F.L.S.; Clements Markham, C.B., F.L.S.; R. C. A. Prior, M.D., F.L.S.; Edward J. Waring, M.D., F.L.S.; George C. M. Birdwood, M.D.; Walter Elliot, K.C.S.I., F.L.S.; J. Forbes Watson, M.D., F.L.S.; Richard Strachey, Major-General, C.S.I., F.R.S.; E. W. Cooke, R.A. F.R.S.; Robert Braithwaite, M.D.; William Mitten, A.L.S.; W. Allport Leighton, F.L.S.; William Phillips; John Goucher, F.L.S.; J. Leicester Warren; Worthington G. Smith, F.L.S.; M. C. Cooke; James M. Crombie, F.L.S.; Alfred W. Bennett, F.L.S.; V. G. More, F.L.S.; Thomas Moore, F.L.S., Floricultural Director to the Royal Horticultural Society; Thomas Thomson, M.D., F.R.S., late Superintendent Royal Botanic Garden, Calcutta; Charles Darwin, F.R.S.; George Bentham, F.R.S.

SCIENTIFIC SERIALS

THE *Journal of Botany* for November, 1872, commences with a paper by Prof. Thiselton-Dyer, on an intricate point of vegetable histology, "Tyloses," or the cellular filling-up of vessels, with a plate. Critical botany is represented by two articles, on *Dasylirion* and *Beaucarnea*, by Mr. J. G. Baker, and notes on some Scandinavian plants, by Dr. Trimen; and geographical botany also by two—"The Influence of Insect Agency on the Distribution of Plants," by Mr. A. W. Bennett, and notes respecting some Birmingham plants, by Mr. Jas. Bagnall. Among the extracts is a very interesting one on some southern plants observed in the environs of Paris in 1871, being an account of the species added to the flora of the neighbourhood of Paris by the German invasion, amounting to 190. In the December number Dr. Trimer records and draws a recent addition to the British flora, *Psamma baltica*; and the whole of the remaining original articles relate to cryptogamic botany—the Rev. Jas. Crombie discourses on lichens, the Rev. P. O'Meara on Diatoms, Mr. J G. Baker, on a new *Asplenium* from Cape Colony, and H. Boswell, on the mosses of Oxfordshire. A large portion of the number for January, 1873, is occupied by a lengthy and interesting biography, accompanied by a portrait of the African traveller, F. Welwitsch. The remaining original articles include a contribution to the subject of the "Influence of Insect Agency on the Distribution of Plants," by Dr. Buchanan White, a valuable and suggestive paper by Prof. M'Nab, and a description by Mr. J. G. Baker of some new ferns from Lord Howe's Island. The short "Notes and Queries" are not the least interesting part of these three numbers.

SOCIETIES AND ACADEMIES

LONDON

Royal Society, Jan. 9.—"Further Remarks on the Sense of Sight in Birds," by Robert James Lee, M.A., M.D. He thinks it would be premature to enter upon general deductions until the data we possess are more numerous, and the anatomical details are generally allowed to be correct. Since his last communication he has received much assistance and valuable information from Mr. Hulke, who has directed considerable attention to the structure of the ciliary muscle in birds. In order to show the different degrees of development of the ciliary muscle, he drew up a short table containing those specimens which have been examined with most attention. For the present he considers the ciliary muscle as a simple structure for the production of one effect, whatever minute differences may exist in the internal arrangement of its fibres. According to the table the axis of vision in the Eagle Owl is 3·7; Vulture, 3·1; Buzzard, 4; *Rhea americana*, 3; Flamingo, 9; Penguin, 6; Andean Goose, 4; Vieillot's Pheasant, 6; Wood Francolin, 4·6; Canada Goose, 5; Hawk-headed Parrot, 4; Spotted Dove, 7; Grouse, 4; Partridge, 4. A second table is a continuation of that commenced in his last communication, and is intended to furnish certain data which are necessary for the determination of the visual powers in various species of birds.

"On the Union of Ammonia Nitrate with Ammonia." By Edward Divers, M.D.

Ammonia nitrate deliquesces in ammonia gas at ordinary temperatures and pressures, forming a solution of the salt in liquefied ammonia. To prepare the product, it is only requisite to pass dry ammonia gas into a flask containing the dry nitrate; but the condensation proceeds more rapidly if the flask is surrounded with ice. The liquid obtained varies in composition according to the temperature and pressure. The liquid boils when heated, and, when nearly saturated with nitrate, deposits crystals of it when cooled—just like an aqueous solution. It can also, like an aqueous solution, be heated above its boiling-point without boiling, and become supersaturated with the salt without crystallising. When poured out into an open vessel, it becomes almost instantly gelatinous in appearance—may, indeed, become so as it falls in a stream from the flask containing it. This effect is due to evaporation of ammonia and solidification of nitrate at the surface of the liquid; on breaking the crust of nitrate, the compound flows out as liquid as ever. It is not caustic to the dry skin. During its decomposition cold is manifested, and during its formation heat is evolved, but not to a great extent, because the heat given out by the liquefaction of the ammonia is nearly all used up in the liquefaction of the nitrate. Its specific gravity can be calculated from its composition, by taking for the purpose 1524·5 as the specific gravity of the nitrate, and 671 as that of the ammonia. In its rate of expansion by heat, the liquid resembles others that exist as such at ordinary temperatures, rather than those that, like ammonia itself, are only retained as such by great pressure. Its expansivity increases with the quantity of ammonia present. Its action upon a great number of substances, principally inorganic, has been tried, and found to be for the most part like that of ammonia (in the absence of water) and ammonia nitrate conjoined. The nitrate appears to undergo double decomposition with most salts, and the ammonia to unite with nearly all of them, including those of magnesium, aluminium, iron, and manganese. It is a good electrolyte, ammonia and hydrogen appearing at the negative electrode, and nitrogen and ammonia nitrate at the positive electrode.

Anthropological Institute, Jan. 7.—Sir John Lubbock, Bart., F.R.S., in the chair. A paper by the late J. W. Jackson was read on the Atlantean Race of Western Europe. The chief aim of the author was to controvert the largely accepted opinion that the dark Atlantean race was of Turanian origin.—A paper by Dr. John Shortt on the Kojahs of Southern India. The true Kojahs or Eunuchs are chiefly seen about the houses of wealthy Mussulman nobles, by whom they are placed at the head of their harems. Sometimes they hold important charges with a considerable amount of control. The ladies of the harem look upon them as their confidential advisers in all matters relating to their personal concerns. The second class of Eunuchs are called Higras or natural Eunuchs, who dress like and ape the manners of women, and are for the most part utterly worthless characters. The paper entered into minute details respecting the physical characters and habits of that strange class of men.—A joint paper by M. H. Gerber and Capt. Butler on the Primordial Inhabitants of Brazil, was also read. It contained valuable and full statistical information as to the populations of the provinces; the occupations of the inhabitants, their industry and productions; the mineral wealth of the country, agriculture, manufactures, and colonisation.

Geologists' Association, Jan. 3, 1873.—The Rev. J. Wiltshire, F.R.S., president, in the chair. "On the Cambrian Rocks of Ramsey Island, St. David's;" Henry Hicks. In an exposed coast section which occurs at the north end of Ramsey Island, the three important groups of strata known under the names Lingula Flags, Tremadoc, and Arenig groups are seen resting on one another in the order of their succession, and are probably better exhibited than at any other place in Wales. The two first groups are those now usually recognised as forming the upper part of the Cambrian, and the latter as the lowest group of the Silurian system. This section is therefore at considerable importance bearing on classification, as it shows clearly the relation of the groups to each other. The Lingula Flags occur as hard siliceous sandstones with grey flaky slate, and dip under the others at an angle of about 60°. They contain the usual *Lingulella Davisii*, in great abundance; also a trilobite of the genus Nesuretus, Sophyton, a supposed land-plant, and numerous worm tracks. The beds are frequently ripple-marked, and give indications of having been shore or shallow water accumulations. The Tremadoc group rests quite comfortably on the Lingula Flags, and at first the beds are much like those of the latter in their lithological characters, but afterwards they gradually assume a darker and more flaggy appearance. Fossils are very plentiful in these beds, and numerous new forms come in. Amongst these may be mentioned the Lamellibranchs, Starfishes, and Encrinites. The tribolites belong to the genera Niobe and Nesuretus. A gentle and gradual depression of the sea-bottom was evidently taking place during the deposition of this group. Resting upon the last-mentioned is the Arenig group, a series of black, iron-stained slates and flags, and with a fauna wholly distinct from that of the Tremadoc group. The Graptolites come in here for the first time, as well as the genera Æglina, Trinucleus, and Ogygia. In many respects the fauna resemble that of the Quebec group of Canada. For the deposition of these beds a deep and decided depression of the sea-bottom must have taken place, and if the succession here is broken, this must have been sudden. It is probable, however, that a fault has passed along the strike of the beds, and that this has removed the series which should have intervened to connect them more closely, lithologically and palæontologically. As far as can be made out by the section, the boundary line between Cambrian and Silurian should certainly be placed above the Tremadoc group as exhibited at St. David's (the upper part of the Tremadoc group of North Wales will doubtless have to be included in the Arenig group) and below the Arenig group.

LEEDS

Naturalists' Field Club and Scientific Association, Dec. 10.—A paper was read by Mr. W. D. Roebuck upon the habitations constructed by hymenopterous insects, with a few remarks upon so-called parasitism, as observable among the British bees. This subject furnishes some noteworthy evidence bearing upon the question of "protective resemblance." When the bee infested by a parasite is social in its economy, and the nest is consequently never entirely deserted, the parasite assumes the colouring of its host, and is thus enabled to deceive and elude the sentries. On the other hand, if the bee attacked is of solitary habits, the female is consequently and necessarily absent when collecting her pollen and honey. This temporary absence is taken advantage of by her parasite, which does not therefore need any protection; and we accordingly find that in every case the solitary bee and her parasite are most strikingly dissimilar in appearance.

EDINBURGH

Botanical Society.—Nov. 14, 1872. The President, Prof. Wyville Thomson, delivered an address, giving biographical sketches of several of the deceased members. He then gave an address on "Fermentation and Putrefaction," which appeared in NATURE, vol. vii. p. 61. Mr. Adam Smith, Melbourne, sent a notice regarding the native bread fungus of Australia. It grows in large tubers, clusters of which are found connected together by small fibrous roots. The largest in a cluster is fully as big as a man's head, the others of smaller sizes. When cut they present the appearance of rice pudding, but although esteemed as a great delicacy by the Aborigines, they are too tasteless and insipid to become valuable for food.—Mr. John Sim noticed the occurrence of *Bupleurum rotundifolium* as a weed in a cottage garden near Perth.—Mr. Sadler exhibited specimens of a species of Lupinus, resembling *L. luteus*, which he found growing in a turnip-field near Blackshields, about 16 miles from Edinburgh, the seeds having probably been introduced with guano.

December 12.—Alexander Buchan, M.A., Vice-President, in the chair.—Mr. James M'Nab, Curator of the Royal Botanic Garden, took the chair as president, in room of Professor Wyville Thomson. "On the Organisation of Equisetums and Calamites," by William Ramsay M'Nab, M.D., Professor of Botany, Royal College of Science, Dublin. The general conclusions arrived at by the author were:—1. The stem of Equisetum differs but little in construction from that of Calamites. 2. In both Equisetums and Calamites the fibro-vascular bundles are but poorly developed. 3. The mass of tissue (woody wedges of Williamson) forming the most important part of the stem, consists of the small fibro-vascular bundles with the addition of a large quantity of thickened parenchyma and prosenchyma (sclerenchyma Mettenius). 4. The sclerenchyma (Mettenius) is part of the cortical tissues, and not a particle of the fibro-vascular bundles. 5. There is no evidence of any growth having taken place in the fibro-vascular bundles comparable to that observed in the dicotyledons. 6. If the stems of Calamites increased in diameter, it was by large additions to the cortical tissues and not to those of the fibro-vascular bundles. The President, Mr. James M'Nab, read a communication on the Disfigurement of Hedge-row Trees by telegraph wires. He thought the cropping of trees for telegraph purposes should be entrusted to some experienced gardener or forester, and not left to the mercy of men to cut and clear away as if paid by contract on the mile of clearance done.—"Notice of the occurrence in England of *Psamma baltica*, R. et Sch." By Philip Maclagan, M.D. The addition of *Psamma baltica* to the British Flora is due to Mr. William Richardson, of Alnwick. Returning one evening in August 1871 from the Holy Island towards Belford, and finding the sand wet, he betook himself to the "bents," not to botanize but to get firmer footing. He had not proceeded far when he met with the stranger growing side by side with *Psamma arenaria*. Afterwards he found it growing in patches at intervals along the coast for upwards of three miles.—Dr. John Kirk, Zanzibar, presented to the University Herbarium a collection of dried plants from the highest zone of vegetation in the Kilimanjaro, below the line of perpetual snow that crowns the summit. The Kilimanjaro is about 20,000 ft. high, in the country of Jagga, East Africa.

BOSTON, U.A.S.

American Academy of Arts and Sciences, Nov. 27, 1872.—Dr. Henry J. Bowditch alluded to a case of aortic aneurism, in which he had with the assistance of Dr. J. C. Warren, and Dr. J. J. Putnam, used electricity for the treatment of this usually fatal disease. The patient, an adult man, had a pulsation distinctly felt in the second right intercostal space, which last, with the parts adjacent, was slightly prominent, but not effaced. The respiratory murmur was free throughout both lungs, save in this part, and there it was bronchial to the extent of two or three inches; dull percussion in the same.

Two operations were made, viz. on November 12 and 17, 1872. Three needles coated with vulcanite were used at each operation. They were introduced about an inch from the first, and from an inch and a quarter to an inch and a half at the second operation. They evidently were introduced into a freely moving current at the first—as seen by the widely moving needle ends—but into a more solid mass at the second. The positive pole of the battery *alone* was applied to them, the negative resting on the right breast on a level with the tumour. The number of cells used (Stone's battery) was gradually raised from two up to sixteen at the first, and to twenty-eight at the second. The operations lasted 14½ and 14 minutes. A little faintness and pulselessness were noticed at the termination of each. They soon passed away. The result of the two operations has been a great solidity of the tumour, with considerable swelling of the parts adjacent, which swelling is now (November 26) subsiding. No superficial redness or sloughing of the skin occurred. No air appeared in the tumour, as noticed often in Europe where needles attached to both poles are usually introduced (viz. *Ciniselli Annali di Medicina*, November, 1870, Frazer's *Edin. Med. and Surg. Journal*, August 1867). The patient has suffered not at all from the operations. It is impossible as yet to say what influence they will have towards his radical cure, but he is now more comfortable than before the first operation.

December 10.—Professor E. C. Pickering exhibited a new form of theodolite magnetometer, which may be constructed at small expense from a common surveyor's transit. A mirror and magnet like that of a Thomson's galvanometer is attached to the cap of the telescope, and a right-angled prism and cross-hairs are placed in front of its eye-piece. The telescope is turned until the image of these cross-hairs is brought to coincide with those already in the eye-piece, when the axis of collimation will be exactly at right angles to the magnetic meridian. The remainder of the evening was devoted to a discussion of the great fire of November 9, by which sixty acres of the most valuable part of the city of Boston were destroyed. Numerous specimens of the effects of the fire were exhibited, among others a fused mass originally leather, but converted by the heat into a substance resembling resin. A strong wind with a velocity of twenty to twenty-five miles per hour was induced by the ascent of the heated air, although the velocity before the fire was but seven miles. This wind converted a narrow street into a sort of gigantic blow-pipe, and the flames were thus carried across Franklin Street, where it is over 100 ft. in width. The progress of the flames against the wind was noted, and explained by the radiant heat, which was so great that some of the engines were unable to get near enough to play on the fire. Buildings to windward might thus be set on fire, while those to leeward would be comparatively protected by the smoke. The carrying power of the air was remarkably great. Flakes of granite were carried across the water to South Boston, and fell in quantities on the side-walks and roofs, and papers were borne in some cases to a distance of over twenty miles. The light was so strong that it was easy to read by it in the higher parts of Belmont, over fifty miles distant; and the fire was seen at sea to a distance of ninety miles.

RIGA.

Society of Naturalists, March 6 (18 N.S.)—M. Frederking communicated a third section of his history of chemistry, in which he referred to the development of the electro-chemical hypothesis, and the discovery of isomorphism, and to that of the vegetable alkaloids.

April 3 (15 N.S.)—M. L. Taube presented a report on a work by M. Fischer, on the disease of bees, called "foul brood," which is ascribed by the author to the dying and subsequent putrescence of a portion of the larvæ. M. Fischer believes that the fluid given by the worker-bees to the larvæ is secreted by the salivary glands, and that the mortality amongst the larvæ is caused by a deficiency of this secretion brought on by a scarcity of food. He considers that this is proved by the fact that "foul-broodedness" in a hive is caused by the removal of its own workers and the substitution of healthy workers from another hive.

April 10 (22 N.S.)—M. Schroeder referred to the comet which was expected by some people to come in contact with the earth in August.—Colonel von Gotschel read a paper on diseases of cage-birds, in which he especially recommended prophylactic measures.

April 24 (May 6 N.S.)—M. C. Berg criticised Sir William Thomson's opinion as to the origin of the first organisms from germs conveyed by meteorites.—M. Teich communicated a contribution to the Natural History of *Cucullia præcana.*

May 1 (13 N.S.)—A discussion took place on the means to be adopted for the protection of small birds, in which MM. Gögginger, Nauck, Westermann, and Burchardt, took part.

May 15 (27 N.S.)—M. Schroeder presented a table of the rainfall at various stations during the summer of 1871, and called attention to the very small amount recorded at Riga.

May 22 (June 3 N.S.)—Dr. Nauck communicated some observations on the torpidity of *Myoxus nitela.*—M. Westermann exhibited a pane of glass in which a circular hole of two inches diameter had been made by a hailstone on May 10. (22 N.S.) Dr. Nauck exhibited plaster-casts of hailstones from the same fall, and proposed a theory of the formation of hail by the production of a whirlwind caused by warm, moist winds meeting cold winds under angles of 90°, when the aqueous vapour is condensed, causing an inflow of air from above and below, and consequently an increase of precipitation, during which the water, striving to retain its fluid form, may easily fall several degrees below its freezing point, and its congelation into masses of ice may be accounted for by the fall into it of small grains.—M. J. H. Kawall gave an account of the publications of the Society of Naturalists of Charkow, including the titles of all the papers.

July 20 (August 1 N.S.)—The society assembled in the court of the Polytechnicum to hear an address in honour of Dr. G. Schweinfurth on his return from his African travels.

August 21 (September 2 N.S.)—Dr. Schweinfurth described several types of the inhabitants of Central Africa, belonging to the Ujam-Ujam, Bongo, Djur, Dinka, Mittu, and Akka branches of the Negro, noticing especially their modes of adorning themselves, and a few peculiar habits.—Baron F. Hoejningen-Huene communicated a continuation of his Phenological observations, containing notes on weather and other natural phenomena during the months of July and August, 1871.

PHILADELPHIA

Academy of Natural Sciences, July 2.—"On a new Genus of Extinct Turtles." Prof. Leidy stated that he had determined that the fossil-turtle he had named *Bæna undata* belonged to a different genus. Besides other well-marked distinctive characters, like the genus *Platemys*, it possessed an additional pair of plates to the usual number found in the sternum of the emydoids. These plates are intercalated between the hyo- and hypo-sternals. In *Platemys Bullockis* they are quadrate. In the new genus they are triangular, and the sutures defining them cross the plastron like a prostrated letter X, from which character it was proposed to name the genus Christernon.

July 9.—Prof. Leidy directed attention to a bottle containing numerous specimens of a minute crustacean from Salt Lake, Utah, caught on the 22nd of June by Mr. C. Carrington, a member of Prof. Hayden's exploring party now in the field. They were received from Prof. Hayden with the remark "that Salt Lake has been supposed, like the Dead Sea, to be devoid of life, but its saltest water contains the most of these little creatures." The crustacean is the *Artemia salina*, which has long been known in Europe, and has been previously found in other localities of this country. The animal has always been viewed with especial interest, in its order, from the fact that it lives and thrives best in a concentrated solution of salt, which would destroy most marine animals. It has not, I believe, been noticed in the ocean, but is found in salt lakes, and salt vats, in which, by evaporation, the brine has become more concentrated than sea water. Artemia is furnished with eleven pairs of limbs, which serve both for progression and respiration. The limbs are four-jointed, and the joints have leaf-like expansions fringed with long feather-like bristles. The narrow abdomen, or tail-like prolongation of the body is six-jointed, and traversed by the intestine. The last joint ends in a pair of processes, furnished each with a bunch of bristles like those of the limbs. The head exhibits a median, quadrate, black eye-spot, and in addition is provided with a pair of pedunculate, globular compound eyes. A short narrow pair of inarticulate antennæ project in advance of the eyes. The head of the male is furnished with a pair of singular organs for seizing the female. These claspers are large double-jointed hooks. In the female they are replaced by a pair of comparatively small horn-like processes. The first abdominal segment bears the ovarian sac in the female, and two cylindroid appendages in the male. The female of the Salt Lake Artemia ranges from four to seven lines in length; the male from three to four lines in length. The colour is translucent-white and ochreous-yellow, with three black eye-spots, and a longitudinal line varying in hue with the contents of the intestine. The ovarian sac appears orange-coloured from the eggs within. The antennæ end in three or four minute setæ, and are considerably longer in the male than the female. The first joint of the claspers is provided on its inner side just below the middle with a spheroidal knob. The last joint forms a rectangular hook, the angle having an elbow-like prominence. When the clasper is thrown forward, the outer border of the hook is convex; the anterior border straight, slightly or deeply concave, and the inner or posterior border is sigmoid. The antennæ are longer than in the female, and longer than the first joint of the claspers; and in the female are longer than their homologues. The ovarian sac is inverted flask-shaped, and has a pair of lateral conical or mamillary, finely tuberculated processes. The caudal setæ are longer than in the male, and are eight to each process. This description is taken from alcoholic specimens. They exhibit considerable variation in size, and to some extent in detail. Prof. Verrill has described what he views as two species of Artemia distinct from the well-known *A. salina*. One he names *A. gracilis*, from near Newhaven, Conn.; the other *A. Monico*, from Lake Mono, Cal. That from Salt Lake differs from either of them as much as they do from *A. salina*, and with the same propriety may be regarded as a distinct species.

I am disposed to view them all as varieties merely of *A. salina*. Prof. Leidy stated that from time to time he had observed specimens of teeth from various cretaceous formations which were identical in character with those of *Lamna elegans* and *L. cuspidata* of tertiary deposits, except that they were devoid of the lateral denticles. He had now in his possession well-preserved specimens of such teeth, unabraded, but exhibiting no trace of the existence of lateral denticles. There were teeth of the *L. elegans* variety found with the skeleton of *Hadrosaurus Foulkii* in New Jersey, and others from the cretaceous of Mississippi and Kansas. There were also teeth of the *L. cuspidata* variety from the cretaceous of Kansas, and one in a block of chalk from Sussex, England. The absence of the lateral denticles in all the cretaceous specimens he thought could hardly be accidental, and suspected that these teeth represented the *oxyrrhina* ancestors, of the tertiary *Lamna elegans* and *L. cuspidata*, which lived during the cretaceous era,

PARIS

Academy of Sciences, Dec. 30, 1872.—M. Faye, president, in the chair. The president read the second portion of his paper on the solar spots. He argued in favour of their cyclonic nature, and said that the pores were simply minute spots. He pointed out that Wilson, in 1783, had suggested that the spots were "eddies and whirlpools," and that Sir J. Herschel had made use of a similar phrase, but that the knowledge only recently obtained was required before these suggestions could be accepted.—M. Jamin read a note on concealed magnetism (*magnétisme dissimulé*). The author found that when a current used to magnetise a horse-shoe bar of iron attained a certain power, the bar appeared to return to its natural state; but that, with either stronger or weaker currents, magnetism was produced. This neutral state he calls "concealed magnetism," and supposes it to be due to a particular distribution of the magnetic force.—A note from Mr. A. Cayley on the condition under which a family of surfaces forms part of an orthogonal system, was next read.—M. Janssen read the second part of his report on the eclipse of December 31. It was referred to the astronomical section.—M. F. P. Le Roux read a paper on peri-polar induction. The author applies the above name to a new form of electro-magnetic phenomena, in which the different points of the body acted on remain at the same distance from the active pole.—A paper on the dimensions of the pores of membranes by M. Guerout was presented by M. Becquerel.—M. Delafont sent a memoir on the first elements of the theory of conjugate points and right poles, which was submitted to the examination of M. Serret.—MM. Le Clère and Du Plantys sent a note on *Phylloxera* which were sent to that commission; and a second memoir on fermentation from M. Sacc was referred to a special commission.—General Doutrelaine sent a note relating to the questions of priority concerning the prolongation of the French meridian; M. Baillaud the elements and ephemerides of 127; and Mr. N. Lockyer an abstract of his late paper on spectrum analysis, communicated to the Royal Society.—MM. Troost and Hautefeuille sent a note on certain reactions of the chlorides of boron and silicon. These bodies decompose porcelain at a high temperature.—M. P. Pichard read a note on the estimation of manganese in iron ores, cast-iron, and steel, by a calorimetric process; and M. A. Houzeau, one on the volumetric estimation of minute quantities of antimony and arsenic.—M. Sorin read a note on the presence of methylamine in methylic nitrate and in methylic alcohol.—M. L. Colin's note on the passage of the blood pigment through the vascular sides in *melanemia palustris* was presented by M. Larrey, which was followed by a note on the distribution of the tympanic cord, by M. J. L. Prevost.—M. A. Béchamp read a note on the alcoholic and acetic fermentation of the liver, and on the physiological alcohol of human urine. The author has obtained from two litres of urine from a man of 50, enough alcohol to estimate.—M. A. Bernard presents a memoir on the "degeneration" of nerves after section, by M. L. Ranvier.—M. L. Posaoz sent a note on the estimation of sugar by cupric solutions. He stated that these liquids may be preserved from their usual faults by the passage of a stream of carbonic anhydride, or by the addition of alkaline bicarbonates.—M. J. Chautard sent a note on the absorption spectrum of delorophyll; and M. Sacc a note entitled, "Studies on Marmots," relating principally to the composition of the urine of these animals.—M. Decharme sent a paper on the ascending motion of liquids in very narrow vessels (bands of porous paper) compared with their ascent in capillary tubes.—M. Boileau sent a note on the preservation of potable water. The author kept eighty bottles of water fresh and free from bad odour during the siege of Paris, by leaving them simply covered with caps of paper.—M. Belgrand made some observations on this note.—M. Dausse sent a note on the best position for flood gauges in rivers.

DIARY

THURSDAY, JANUARY 16.

Royal Society, at 8 30.—Note on an Erroneous Extension of Jacobi's Theorem: J Todhunter.—On a New Formula for a Microscopic Object-Glass: F. H. Wenham.—Additional Note to the Paper On a Supposed Alteration in the Amount of Astronomical Aberration of Light produced by the Passage of the Light through a considerable Thickness of Refracting Medium: Sir G. B. Airy.
Royal Institution, at 3.—On Oxidation: Dr. Debus.
Zoological Society, at 4.
Society of Antiquaries, at 8.30.—Election of Fellows.—Opening of Exhibition of Bronze Implements and Weapons.
Linnean Society, at 8.—On the Recent Synonyms of Brazilian Ferns: J. G. Baker.
Chemical Society, at 8.—On Ethylamyl: Mr. Grimshaw —On the Heptanes from Petroleum: C. Schorlemmer.—On the Vanadates of Thallium: T. Carnelley.—On the Formation of Sulphide of Sodium by the Action of Sulphuretted Hydrogen upon Sodium Chloride: C. T. Kinggeth.
Numismatic Society, at 7.
Royal Society Club, at 6.

FRIDAY, JANUARY 17.

Royal Institution, at 8.—On the Old and New Laboratories at the Royal Institution: Dr. W. Spottiswoode
Gresham Lectures, at 7.—On Contagion and Infection: Dr. E. S. Thompson.
Medical and Microscopical Society, at 8.—President's Introductory Address: Jabez Hogg.

SATURDAY, JANUARY 18.

Royal Institution, at 3.—On Comparative Politics: Dr. E. A. Freeman.
Gresham Lectures, at 7.—On Antiseptics and Disinfectants: Dr. E. S. Thompson.

MONDAY, JANUARY 20.

London Institution, at 4 —On Air, Earth, Fire, and Water: Prof. Armstrong.
Society of British Architects, at 8.
Medical Society, at 8.
Asiatic Society, at 8.
Victoria Institute, at 8.

TUESDAY, JANUARY 21.

Society of Civil Engineers, at 8.
Statistical Society, at 7.45.
Anthropological Society, at 8.—Annual General Meeting.
Zoological Society, at 8.30.

WEDNESDAY, JANUARY 22.

Society of Arts, at 8
Geological Society at 8.—On the Glaciation of Ireland: J. F. Campbell.—Observations on the more remarkable Boulders of the North-West of England and the Welsh Borders: D. Mackintosh.—On the Origin of Clay-ironstone: J. Lucas.
Royal Society of Literature, at 8.30.
Archæological Association, at 8.
London Institution, at 7.—Conversazione. The Song of Roland: Victor Pleiginer.

THURSDAY, JANUARY 23.

Royal Society, at 8.30.
Royal Society Club, at 6.
Royal Institution at 8.—On Oxidation: Dr. Debus.
Society of Antiquaries, at 8.30.—Implements of the Bronze Period: John Evans.

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